Columbia Business School
Center on Japanese Economy and Business

CENTER ON JAPANESE ECONOMY AND BUSINESS

日本经济经营研究所

Working Paper Series

June 2024, No. 385

REIT Equity Financing and Capital Investment in the Presence of the Central Bank Put

Takahiro Hattori and Jiro Yoshida

This paper is available online at https://business.columbia.edu/cjeb/research-publications.

COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

REIT Equity Financing and Capital Investment in the Presence of the Central Bank Put

By

Takahiro Hattori
(The University of Tokyo)

Jiro Yoshida
(The Pennsylvania State University and The University of Tokyo)

April 30, 2024

CREPE DISCUSSION PAPER NO. 154

CENTER FOR RESEARCH AND EDUCATION FOR POLICY EVALUATION (CREPE)
THE UNIVERSITY OF TOKYO
https://www.crepe.e.u-tokyo.ac.jp/

REIT Equity Financing and Capital Investment in the Presence of the Central Bank Put

Takahiro Hattori* and Jiro Yoshida†

April 30, 2024

Abstract

This is the first study to show that the Bank of Japan's (BOJ) unconventional monetary policy of purchasing shares of real estate investment trusts (REITs) affects the real economy through equity-financed investment. Specifically, the paper first shows that the BOJ purchases REIT shares after observing a significantly negative cumulative overnight-morning return. This put-option-like downside protection to the REIT market has a positive market-wide effect on intraday returns in proportion to each REIT's exposure to BOJ equity demand. The targeted REITs are more likely to issue equity and invest the raised capital in real assets, consistent with the BOJ's intention to stimulate corporate spending by lowering the cost of capital. However, this investment response is limited to the targeted REITs.

JEL codes: E52, E58, R33

Keywords: equity public offerings, large-scale asset purchases (LSAP), quantitative easing (QE), central banking, real estate investment trust, unconventional monetary policy

* University of Tokyo, Graduate School of Public Policy. hattori0819@gmail.com. 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan.
† The Pennsylvania State University and the University of Tokyo. jiro@psu.edu, 368 Business Bldg., University Park, PA 16802 USA.

1. Introduction

The Bank of Japan (BOJ) began purchasing real estate investment trust (REIT) shares and equity exchange traded funds (ETFs) in October 2010 as part of its large-scale asset purchase (LSAP) program, in addition to its open market operations for Japanese government bonds (JGBs). These programs complemented the BOJ's zero interest rate policy (since 1999) and bond-LSAP (since 2001), which preceded LSAP programs by other central banks (Krishnamurthy and Vissing-Jorgensen, 2013). In April 2013, the BOJ increased the amount of asset purchases under a new policy regime called quantitative and qualitative monetary easing (QQE). After a decade of REIT purchases, the BOJ has become one of the largest owners of public REITs, disclosing its holdings of more than 5% of the outstanding shares of 20 REITs in its Report of Possession of Large Volume as of December 2020.[1] Shirakawa (2010), a former governor of the BOJ, explains that the primary objective of the REIT/ETF purchase program is to "reduce risk premiums for financial assets and stabilize the economy by attracting more funds into the financial markets," suggesting that it should affect investors' risk-taking in equities beyond long-term bonds. The big question is whether this unconventional policy affects the real economy through corporate investment, as predicted by Tobin's Q.

This study is the first to analyze whether the BOJ's REIT purchase program has the intended effect on REIT share prices and capital investment. We extend Hattori and Yoshida (2023a) and Charoenwong et al. (2021), who show that the BOJ's ETF purchase increases stock prices and affects the capital investment. We provide evidence that the BOJ's REIT purchase

[1] These equity purchases were an unprecedented move in the history of central banking. Although the Swiss National Bank also holds US corporate shares, its aim is to control foreign exchange rates rather than interest rates and risk premiums.

program mitigates an increase in risk premia after an unexpected adverse shock to REIT share prices and encourages REITs to undertake capital investments through equity financing. Specifically, we unveil the BOJ's REIT purchase rule, test whether the BOJ's purchases positively affect REIT share prices, and test whether the BOJ's purchase affects REIT public offerings (POs) and subsequent capital investment.

First, the BOJ purchases REIT shares after observing a significantly negative cumulative index return during the overnight and morning periods. The probability of the BOJ's REIT purchase as a function of cumulative returns has the same form as the payoff to a put option. This result indicates that (1) the BOJ makes its purchase decision during lunchtime before the afternoon market opens, and (2) the BOJ intends to provide downside protection to the REIT market. In effect, the BOJ provides investors with a put option—analogous to the "Fed put" (Cieslak and Vissing-Jorgensen, 2021)—rather than actively raising stock prices.

Second, the BOJ's intervention positively affects REIT returns. It is difficult to identify the effect of BOJ's REIT program because the counterfactual state of the capital market is unclear because the BOJ intervenes in the market precisely when returns are negative (Hattori and Yoshida, 2022, 2023a, 2023b). Our identification exploits two features of the BOJ's purchase program. The first feature is that the BOJ purchases REIT shares after the close of the morning market. Thus, we use intraday return data to estimate the effect on lunchtime and afternoon returns. The second feature is that the BOJ purchases only a subset of REITs. We exploit the cross-sectional variation in the intensity of the BOJ's purchase impact. We first measure the change in return differences between target and non-target REITs after the BOJ purchase. Then, following Barbon and Gianinazzi (2019) and Hattori and Yoshida (2023a), we construct a measure of the BOJ's purchase

demand for each REIT. Using this demand measure, we estimate the effect of the BOJ's purchase on lunchtime and afternoon returns. We find a statistically significant positive effect on REIT returns.

Third, the BOJ program affects REIT's financial and investment decisions. Charoenwong et al. (2021) study how the BOJ's ETF purchase affects corporate financial and investment decisions. However, because the BOJ buys diversified passive equity ETFs that track market-wide indexes such as TOPIX and NIKKEI 225, market capitalization weights are the only cross-sectional variation. In contrast, the REIT purchase program targets only part of REITs, creating a sharp cross-sectional variation. Furthermore, Japanese corporations issue equity only infrequently and use the raised capital for various uses, not just capital investment. The use of capital is often opaque, creating share price drops due to asymmetric information.

In contrast, REITs may be more responsive to policy interventions than corporations because they issue shares frequently and time the market. Another advantage is that REITs announce the exact use of funds and the expected expenditure schedule on the same day as the equity offering. For example, Nippon Building Fund announced the new issue and secondary offering of investment units and the acquisition of two specific properties on the same day. Equity issuance is closely related to capital expenditures and property acquisitions for all REITs. We use this feature to find a statistically significant positive relationship between the BOJ purchase and REIT equity issuance. These equity funds are primarily used for capital investment. However, the BOJ's demand measure, which includes positive spillovers to non-target REITs, has no statistically significant effect on equity financing. Thus, the BOJ's program has the intended effect on equity financing and capital investment for target REITs but not for non-target REITs.

Overall, the BOJ's REIT purchase program promotes REIT capital investment by improving the market condition for equity financing through countercyclical intervention. This monetary program shares a common feature with the BOJ's other unconventional policy measures, such as yield curve control, in that it provides downside protection to securities prices through a contingent intervention rule (Hattori and Yoshida, 2023b). While it is beyond the scope of our study to identify a long-run causal relationship between the REIT program and the cost of capital for REITs, a commitment to provide downside protection may be an effective tool for central banks to mitigate investor concerns during a crisis (e.g., Galariotis et al., 2018; Lutz, 2015). Our study contributes to the literature by identifying the specific channel through which an unconventional equity purchase program affects the real economy through business investment. It complements findings on aggregate macroeconomic variables such as output based on vector autoregressions (VARs) and calibrated dynamic stochastic general equilibrium (DSGE) models.

The remainder of this paper is organized as follows. Section 2 reviews the literature. Section 3 describes the BOJ REIT purchase program, and Sections 4 and 5 analyze the effect of the BOJ's purchase on returns, equity financing, and capital investment. Section 6 concludes.

2. Literature Review

Policy measures that directly intervene in equity markets are rare because monetary policy affects a wide range of capital markets without direct intervention: for example, corporate bond markets (Guidolin et al., 2017; Nozawa and Qiu, forthcoming), bank lending (Kapoor and Peia, 2021), bond collaterals (Avouyi-Dovi and Idier, 2012), foreign bond markets (Neely, 2015), foreign exchange (Claus et al., 2018; Ferrari, 2021, Dedola et al., 2021), gold (Claus et al., 2018),

and equities and REITs (Claus et al., 2018; Jansen and Zervou, 2017; Kholodilin et al., 2009; Henseler and Rapp, 2018).

A small number of studies suggest that the BOJ's ETF purchases can reduce equity risk premiums by increasing stock prices (Barbon and Gianinazzi, 2019; Charoenwong et al., 2021; Harada and Okimoto, 2019; Hattori and Yoshida, 2023a), but no study investigates the effect of REIT purchase on REIT share prices, public equity offerings, and capital investment. A higher stock price implies a lower risk premium if the risk-free rate is unchanged around the zero lower bound.

For the BOJ's operations to affect stock prices, there must be limits to arbitrage between the stock market and other financial markets. Otherwise, the BOJ's additional demand for stocks will be spread across all financial markets through arbitrage. Thus, this stock price impact is analogous to LSAP's effect through the scarcity channel (D'Amico et al., 2012; Krishnamurthy and Vissing-Jorgensen, 2011, 2013; Hamilton, 2018). The scarcity channel hypothesis states that a central bank's LSAP can affect long-term bond prices if bond markets are segmented by investors' preferred maturity habitats (Modigliani and Sutch, 1966; Wallace, 1981; Vayanos and Vila, 2009; Greenwood and Vayanos, 2014). This effect on stock prices takes effect through a risk-taking channel (Bauer et al., 2023).

The BOJ asset purchase programs can further affect corporate investment through the credit channel by relaxing bank collateral requirements (e.g., Peek and Rosengren, 2000; Gan, 2007). They may also affect consumption through the wealth effect. They could also improve risk sharing among agents with limited participation in segmented markets (Peng and Zervou, 2022). However, these channels deviate from the traditional neoclassical channels (i.e., cost of capital

effects, wealth effects, and exchange-rate effects) and most LSAPs, which target the yield on long-term government bonds and mortgage-backed securities (MBS) when the short-term policy rate is near the zero lower bound (ZLB).

Another program that targets real estate securities is the Fed's MBS purchase. Hancock and Passmore (2011) find that this purchase program put significant downward pressure on mortgage rates through announcement effects during the financial crisis and portfolio rebalancing effects. Krishnamurthy and Vissing-Jorgensen (2011) find evidence for a signaling channel, a unique demand for long-term safe assets, an inflation channel, an MBS prepayment channel, and a corporate bond default risk channel. However, Stroebel and Taylor (2012) do not find evidence of the statistically significant effect of the MBS purchase program once controlling for simultaneous changes in prepayment and default risks. Even when the announcement of the program appears to have lowered spreads, they find no separate effect of the size of the stock of MBS purchased by the Fed. Furthermore, Chakraborty et al. (2019) find that MBS purchases increased mortgage origination but reduced commercial lending, suggesting distortionary effects across banks and firms. Among MBS, Boyarchenko et al. (2019) study variation in MBS spreads in the time series and across securities and show that spreads on lower-coupon MBS declined sharply upon announcement, whereas spreads on higher-coupon MBS widened. Kandrac (2018) shows that the Federal Reserve's MBS purchases adversely affected volumes, trade sizes, and implied financing rates in dollar roll transactions, while bid-ask spreads remained mostly unaffected.

The large-scale asset purchase programs (LSAPs), including the MBS program, affect the real economy. In addition to a more intuitive effect on inflation, studies find the effect on real GDP and

unemployment rates, although the magnitude of the effects varies significantly across studies (Borio and Zabai, 2016; Gambetti and Musso, 2020). The effects on output also tend to be transitory (e.g., Schenkelberg and Watzka, 2013; Gambacorta, Hofmann, and Peersman, 2014; Weale and Wieladek, 2016). These studies typically use a variant of VARs or calibrated DSGE models. Thus, they do not directly estimate the effect of LSAPs on consumption and business investment. In addition, these studies do not analyze stock purchase programs.

3. The REIT Purchase Program

3.1 The Japanese REIT market

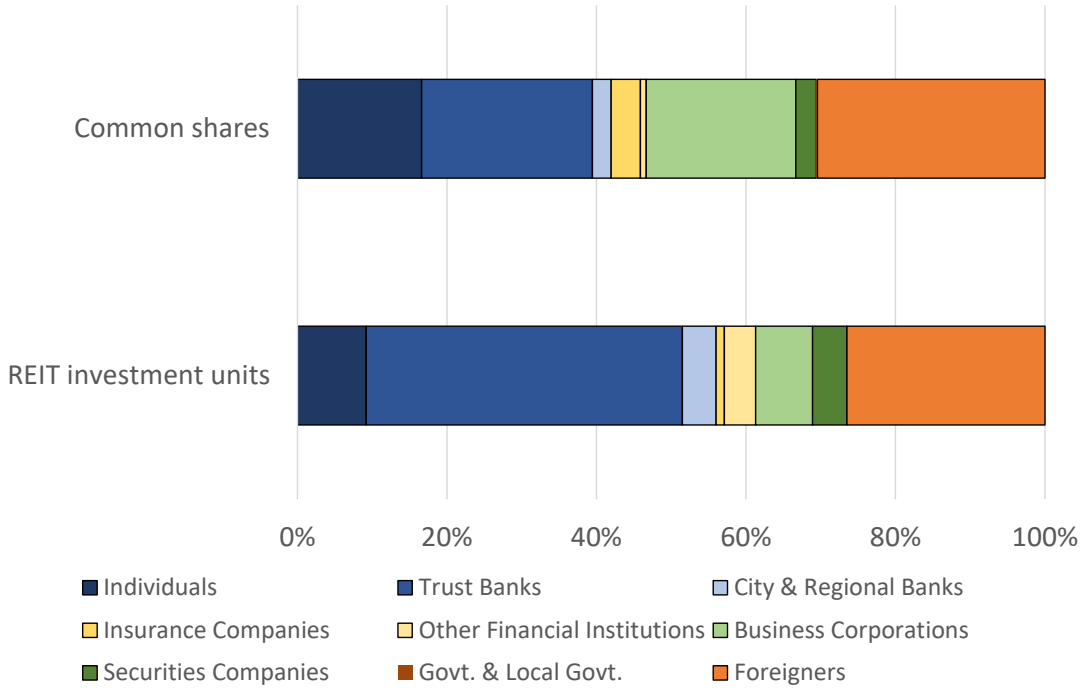
The establishment of Japanese REITs was facilitated by the 2000 amendment to the Act on Investment Trusts and Investment Corporations, as outlined by Hattori and Yoshida (2022). The first two REITs, Nippon Building Fund and Japan Real Estate, were listed on the Tokyo Stock Exchange (TSE) in September 2001. Since then, the Japanese public REIT market has grown significantly in terms of the number of listed REITs and market capitalization. As of December 31, 2022, there were 61 listed REITs with a total market capitalization of JPY 16 trillion, which constituted approximately 2% of the TOPIX market capitalization at the end of the year, raking the second in market size after the US REIT market. Except for the Global Financial Crisis and COVID-19, the TSE-REIT Index (ex-dividends) generally exhibited an upward trend.

Using Japanese REIT data has several advantages for the present study. First, each REIT offers equity shares more frequently than listed corporations. The difference is more pronounced during the unconventional monetary policy than before. Second, unlike listed corporations, REITs explicitly associate POs with capital investment by specifying detailed investment plans for each

PO. For example, Nippon Building Fund issued the "Notice Concerning Issue of New Investment Units and Secondary Offering of Investment Units" on October 9, 2020 (Appendix A). Section 4 of this notice (Amount of Capital, Use and Schedule of Expenditure of Funds to be Procured) specifies that "[p]rocured funds are scheduled to be used to fund acquisition of specified assets which NBF contemplates acquiring as published today in the "Notice of Acquisition and Commencement of Lease of Domestic Assets (Acquisition of Shinjuku Mitsui Building and Gran Tokyo South Tower)." In turn, the acquisition announcement specifies the name of the assets to be acquired, the acquisition price, the seller, the contract date, the acquisition date, the acquisition financing, and the payment method. Thus, Japanese REITs typically raise equity to fund specific asset acquisition deals. For this type of equity financing, REIT prices do not decrease because issues stemming from asymmetric information are minimal. Thus, Japanese REITs provide a unique environment to test whether the equity cost of capital affects investments, as Tobin's Q theory suggests.

Figure 1 shows the proportion of each investor type in the number of corporate common shares (in March 2022) and in the number of REIT investment units (in February 2022). An important characteristic of the Japanese REIT market is that domestic individuals primarily own Japanese REITs. The share of foreign investors is 26.5% for REITs compared to 30.4% for common shares. Trust banks own the largest share of REIT investment units (42.3%), most of which are for investment and annuity trust accounts (33.8%), although the share of direct individual ownership is small (9.2%). The sum of trusts and direct individual holdings accounts for 43.6% of REITs as compared to 27.4% for common shares. Thus, REIT share prices affect individual wealth more directly than stocks.

Figure 1 Corporate and REIT Investor Types



Source: Japan Exchange Group

3.2 Program Overview

The BOJ's REIT purchase program started in October 2010 when it set up a fund and purchased REITs and ETFs. The BOJ states three objectives for purchasing risky assets. First, the BOJ aims to stimulate firms' and households' spending by decreasing funding costs and reducing long-term interest rates and risk premiums. Second, the BOJ expects investors and financial institutions to increase their portfolio allocations to risky assets such as stocks, REITs, and loans to ease the private sector's funding. Third, the BOJ aims to eliminate deflationary expectations and decrease real interest rates. The BOJ is the only central bank that purchases REITs.

The BOJ strengthened REIT purchases in April 2013 under Quantitative and Qualitative

Easing (QQE), in which the BOJ significantly increased the monetary base and the amount of unconventional asset purchases and implemented Yield Curve Control (YCC).[2] Before QQE, the BOJ initially purchased REITs up to a limit of 50 billion JPY, which was increased later by 10 billion JPY in April 2012. Under QQE, the BOJ changed the limit to an annual purchase of 30 billion JPY. Further, from October 2014, the BOJ tripled the annual purchase amount to 90 billion JPY under QQE2. During the COVID pandemic, the BOJ doubled the limit to 180 billion.

The BOJ imposes several conditions for the purchase of REITs. For a REIT to be eligible for purchase, the BOJ purchases the REIT with an AA or higher credit rating. Specifically, according to "Guidelines on Eligible Collateral," the BOJ purchases the REIT issued by a firm that must be rated AA or higher by a recognized rating agency.[3] REIT management companies tend to take credit ratings from R&I and JCR, the Japanese rating agencies.

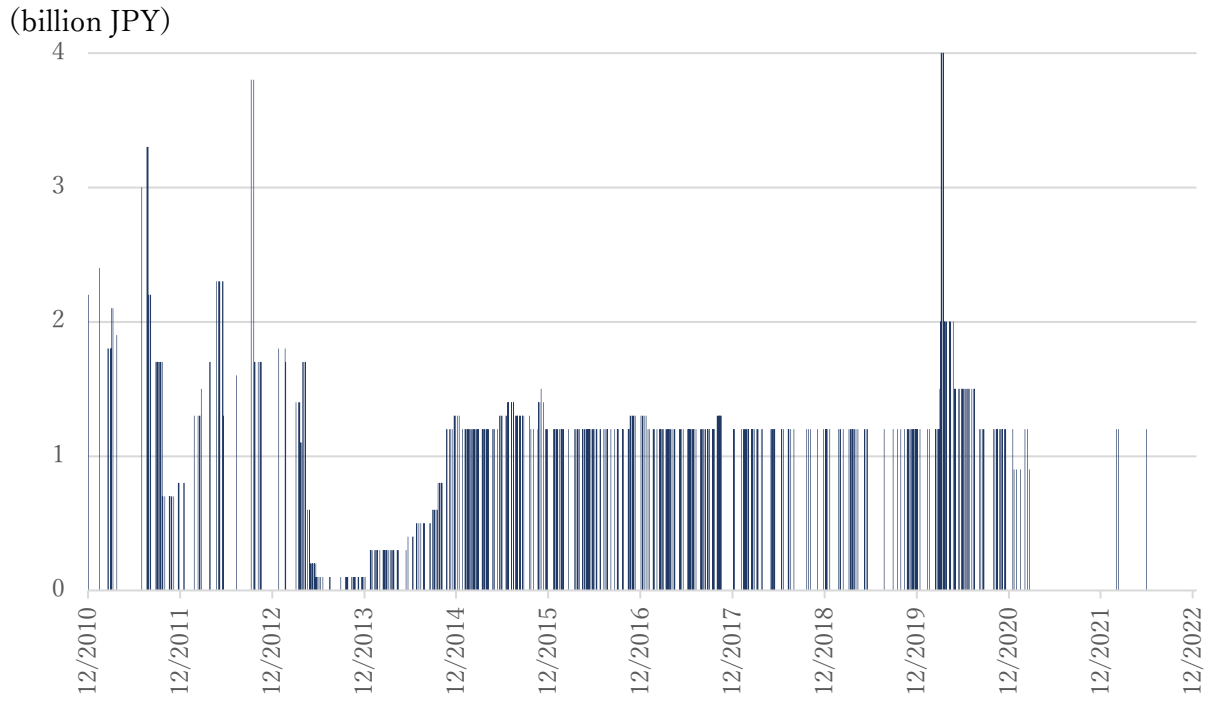
Figure 2 shows the amount of daily REIT purchases. The BOJ purchased approximately 1.2 billion JPY of REIT shares for each operation between November 2014 and the end of 2019 but temporarily increased the amount during the COVID pandemic. The BOJ's REIT holdings and ownership ratio increased significantly during QQE2. However, the frequency of the BOJ purchase decreased considerably in 2021 and 2022. The main reason is that the BOJ's ownership shares of individual REITs became significant by 2020. The BOJ purchases the shares of individual REITs instead of index funds. After ten years of active REIT purchases, in 2019, the BOJ's total REIT holdings accounted for approximately 3.5% of the total market capitalization of approximately 16

[2] More details about QQE and QQE2 are available in Hattori and Yoshida (2023b), Hattori (2020), and Hattori and Takahashi (2022).. For more information, see https://www.boj.or.jp/en/announcements/release_2013/k130404a.pdf and https://www.boj.or.jp/en/announcements/press/koen_2013/data/ko130412a1.pdf.

[3] Additionally, the BOJ must have traded for over 200 days with an annual trading value of JPY 20 billion or more.

trillion JPY. The largest ownership share reached 10% in 2019.

Figure 2 The BOJ REIT Purchases



Source: Bank of Japan

3.3 Data

Table 1 shows the descriptive statistics of the dummy variable for the BOJ's REIT purchase, and Table 2 shows the descriptive statistics of REIT returns. The BOJ's purchase operations occurred on less than 20% of trading days between 2012 and 2014 but on more than 30% of trading days between 2014 and 2016. In 2020, the proportion increased to 43.9% due to the COVID-19 pandemic. However, it sharply decreased to 2% in 2021. Since the BOJ increased the purchase amount of REITs after November 2014, while the number of REITs has been stable

after November 2014, our main regression covers the data from November 2014 to December 2021.

Table 1 The Descriptive Statistics of the REIT Purchase Dummy Variable

Year	Obs.	Mean	Std.dev.
2010	13	0.169	0.610
2011	260	0.247	0.655
2012	261	0.171	0.586
2013	261	0.115	0.360
2014	261	0.143	0.298
2015	261	0.353	0.569
2016	257	0.345	0.549
2017	252	0.356	0.554
2018	260	0.217	0.463
2019	260	0.203	0.451
2020	261	0.439	0.817
2021	260	0.023	0.152
All	3,137	0.218	0.519

This table shows the number of observations (trading days) and the mean and standard deviation of the dummy variable for REIT purchases in our sample between 2010 and 2021. The mean value represents the empirical probability of the BOJ's REIT purchase for each year.

Table 2 Descriptive Statistics of REIT Returns

	Obs.	Mean	Std.dev.	Min.	Max.
Daily (15:00 previous day–15:00)	85,120	0.0003	0.0213	-0.4839	0.7372
Overnight and morning (15:00 previous day–11:30)	85,200	0.0000	0.0095	-0.1681	0.1599
Lunchtime (11:30–12:30)	85,200	-0.0001	0.0029	-0.1048	0.0886
Afternoon (12:30–15:00)	85,200	0.0002	0.0091	-0.1746	0.1516

This table shows the descriptive statistics of pooled REIT returns in our sample between 2010 and 2021.

3.4 Estimating Purchase Rule

The BOJ does not make advance notice regarding the date and amount of its REIT purchase, unlike Japanese government bond (JGB) auctions (Hattori, 2020; Hattori and Takahashi, 2022). Instead, the BOJ publicly discloses the ex-post aggregate amount of REIT purchases, as depicted in **Error! Reference source not found.**. However, the BOJ does not disclose its purchase a mount for each REIT or the specific time of purchase. Thus, we estimate the BOJ's purchase rule using a linear probability model by following Hattori and Yoshida (2022). We divide each trading day into five subperiods: the overnight period (from 15:00 on the previous trading day to 09:00), the morning market (from 09:00 to 11:30), the combined overnight and morning period (from 15:00 on the previous trading day to 11:30), the lunchtime (from 11:30 to 12:30), and the afternoon market (from 12:30 to 15:00). For each subperiod i, we estimate:

$$\mathbb{I}_t = \alpha_1^i + \sum_{d=\{1,\dots,5,7,\dots,10\}} \beta_1^{i,d}\, \mathbb{r}_t^{i,d} + \varepsilon_{1,t}^i, \tag{1}$$

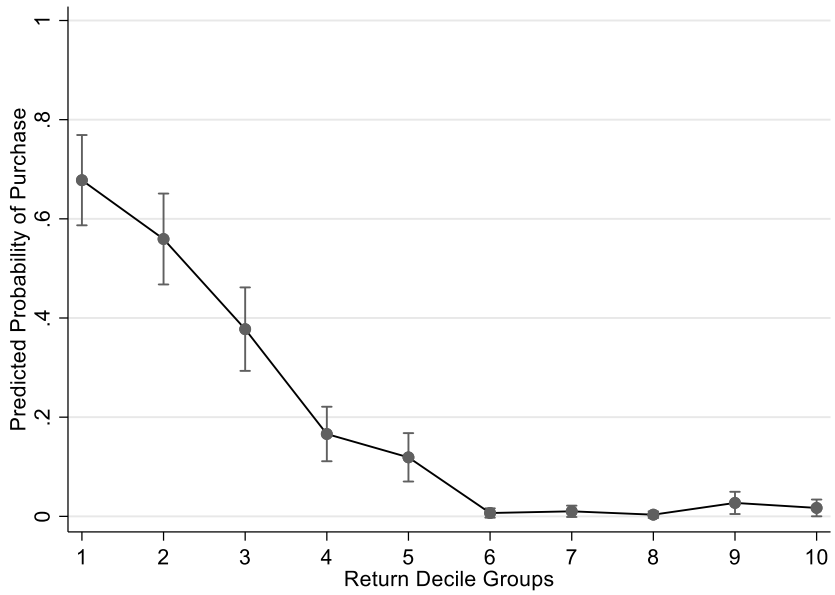
where $\mathbb{I}_t$ denotes a dummy variable for a REIT purchase on date t, and $\mathbb{r}_t^{i,d}$ denotes a dummy variable for decile-group d of a subperiod-i REIT index return on date t. We use the sixth-decile group as the reference group. Using the TSE-REIT Index obtained from Bloomberg, we compute REIT returns from April 2013 to December 2021.

Figure 3 shows the predicted purchase probabilities for the return decile groups based on Eq. (1) for the combined overnight and morning period.[4] The results demonstrate an apparent contingency of REIT purchases on the cumulative overnight and morning return. The purchase

[4] The results for other subperiods are available upon request. The results are almost identical to those in Hattori and Yoshida (2022).

probability is approximately 0.7 when the cumulative return is in the first decile. The probability monotonically and almost linearly decreases to 0.00 for the sixth return decile group. The purchase probability is consistently about zero, with minimal standard errors from the sixth to tenth decile groups. The decile groups 1-5 roughly correspond to negative returns, whereas groups 6-10 roughly correspond to positive returns.

Figure 3 Purchase Probability by Return Decile Groups



This figure depicts the predicted probability of the Bank of Japan's REIT purchase corresponding to 10 decile groups of cumulative REIT index returns during the overnight and morning periods. The first decile represents the lowest (negative) return, whereas the tenth decile represents the highest return. The linear probability model is specified in Eq. (1). The sample period is December 15, 2010, to December 31, 2020. The 95% confidence intervals are based on Newey and West's (1987) standard errors.

We further analyze the sign of combined (cumulative) returns during the overnight and morning periods. In particular, we pay particular attention to cases when an overnight return and the subsequent morning return have the opposite signs. Similar to the results for the BOJ's ETF purchase (Hattori and Yoshida, 2023a), we hypothesize that the REIT purchase also depends on

cumulative overnight and morning returns instead of overnight returns or morning returns separately. We estimate the mean purchase frequency α^i from the estimation equation for subsample i with different combinations of overnight and morning returns as follows:

$$\mathbb{I}_t = \alpha_2^i + \varepsilon_{2,t}^i. \tag{2}$$

We consider four subsamples: (1) the cumulative return is positive, but the overnight return is negative; (2) the cumulative return is positive, but the morning return is negative; (3) the cumulative return is negative, but the overnight return is positive, and (4) the cumulative return is negative but the morning return is positive.

Table 3 presents the result. In columns (1) and (2), the purchase frequency is zero regardless of return combinations. In other words, the BOJ does not purchase REITs as long as the overnight-to-morning cumulative return is positive, even if either an overnight return or a morning return is negative. In contrast, when an overnight-to-morning cumulative return is negative (columns (3) and (4)), the BOJ's purchase frequency is significantly different from zero, even if either an overnight return or a morning return is positive.

These results strongly suggest that the BOJ's REIT purchase decision is based on the cumulative REIT return during the overnight and morning period. Furthermore, lunchtime and afternoon returns do not show the same result. Thus, we conclude that the BOJ submits REIT purchase orders during lunchtime based on cumulative overnight-morning returns.

Table 3 The Average Frequency of REIT Purchases by the Sign of Returns

	(1)	(2)	(3)	(4)
Cumulative Return	Positive		Negative	
Overnight Return	Negative	Positive	Positive	Negative
Morning Return	Positive	Negative	Negative	Positive
REIT Purchase Frequency	0.0000	0.0000	0.2936***	0.3611***
			(0.0336)	(0.0364)
Observations	312	227	361	252

Note: This table shows the mean of the REIT purchase dummy variable for the subsamples with different combinations of overnight and morning REIT returns. Columns (1) and (2) show the results for subsamples with positive cumulative returns, which include a sample with negative overnight and positive morning returns (column (1)) and a sample with positive overnight and negative morning returns (column (2)). Similarly, columns (3) and (4) show the results for subsamples with negative cumulative returns, including a sample with positive overnight and negative morning returns (Column (3)) and a sample with negative overnight and positive morning returns (column (4)). Newey and West's (1987) standard errors are shown in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

4. The Effect on REIT Returns

4.1 Returns for Target REITs

We first estimate the effect of BOJ's REIT purchase on returns by focusing on the post-purchase change in return premiums for target REITS, following Harada and Okimoto (2022). Because the BOJ only purchases the REITs rated AA or above, the BOJ's purchase directly creates security demand for these target REITs according to their market capitalization. We use this cross-sectional variation to identify the effect of the BOJ's purchase. However, a simple regression of daily returns on the BOJ purchase dummy is subject to an endogeneity issue because of our finding in the previous section that the BOJ's purchase is contingent on a negative cumulative overnight and morning REIT return. We address this endogeneity issue by using lunchtime and afternoon

returns based on our finding that the BOJ decides to purchase REITs after the morning market closes. Furthermore, Hattori and Yoshida (2023a) find that the BOJ's similar ETF program increases trades only at the opening of the afternoon market (12:30). Because lunchtime orders are cleared at the beginning of the afternoon session, we primarily focus on lunchtime returns (11:30-12:30). However, we also estimate the effect on afternoon returns (12:30-15:00) to capture continued price adjustments.

We run a panel regression for REIT i percentage return r_{it}^k on the BOJ allocation weight w_{it} and the BOJ REIT purchase amount (in trillion yen) $purchase_t$ for subperiod $k = \{lunchtime\ (11{:}30 \text{ to } 12{:}30), afternoon\ (12{:}30 \text{ to } 15{:}00)\}$ on date t between November 2014 and December 2021:

$$r_{it}^k = \alpha_3^k + \beta_3^k w_{it} + \gamma_3^k purchase_t + \delta_3^k w_{it} \times purchase_t + \eta_i + \tau_v + \varepsilon_{3,it}, \qquad (3)$$

where w_{it} takes the value of zero for non-target REITs and the value of market capitalization weight for target REIT i, $purchase_t$ denotes the amount of the BOJ's purchase in trillion JPY on date t, η_i denotes REIT fixed effects capturing time-invariant heterogeneity in risk, liquidity, and other characteristics, τ_v denotes year-month fixed effects, and $\varepsilon_{3,it}$ denotes the error term.

Table 4 shows the estimation result. Column (1) shows the result when we use the lunchtime return as the dependent variable. The coefficients on $purchase$ and $w \times purchase$ are both positive and statistically significant at least at the 5% level. Thus, after controlling for the unconditional mean return differences by REITs, a one-trillion JPY purchase increases the lunchtime return by 0.337 percentage points for the entire REIT market and additional 0.0361 percentage points for a target REIT that has a 1% weight. Column (2) shows a similar but larger

effect on afternoon returns. The estimated coefficients suggest that a one-trillion JPY purchase increases REIT prices further in the afternoon by 0.553 percentage points and additionally by 0.116 percentage points for a target REIT with a 1% weight. This suggests that the BOJ's REIT purchase increases REIT prices after the REIT market experiences negative overnight and morning returns.

Table 4 Panel Regression Results for Target REITs

	(1) Lunchtime returns	(2) Afternoon returns
w_{it}	-0.00114	-0.00551
	(0.00143)	(0.00459)
$purchase_t$	0.337***	0.553***
	(0.0489)	(0.149)
$w_{it} \times purchase_t$	3.611**	11.64*
	(1.749)	(6.948)
Constant	-0.000256***	4.69e-05
	(2.35e-05)	(7.50e-05)
REIT fixed effects	Yes	Yes
Year-month fixed effects	Yes	Yes
Observations	74,160	74,160
R-squared	0.007	0.003

Note: This table shows the results of the panel regressions for lunchtime returns and afternoon returns (Eq. (3)). The data is from November 2014 to December 2021. Robust standard errors are shown in parentheses.

4.2 The BOJ's Overall Security Demand

Barbon and Gianinazzi (2019) theoretically demonstrate that equity returns are linearly related to the measure of BOJ's overall security demand, which is defined as the product of the purchase amount and the return variance-covariance matrix. Following their method, we define the REIT purchase amount $u_{\mathrm{i}} \equiv w_i \times purchase_t$ and the BOJ's security demand measure $\pi \equiv \Sigma u$,

where Σ is the variance-covariance matrix of asset returns. Intuitively, the covariance adjustment is made because even a non-target REIT return is impacted if it is volatile and correlated with other REITs. Thus, we hypothesize that lunchtime stock returns are positively related to the BOJ's security demand measure π in the cross-section on the day of the actual intervention. We test this hypothesis by regressing lunchtime and afternoon returns on the purchase amount and the demand measure:

$$r_{it}^{k} = \alpha_4^k + \beta_4^k \pi_{it} + \gamma_4^k u_{it} + \eta_i + \tau_v + \varepsilon_{4,it}, \qquad (4)$$

where η_i denotes REIT fixed effects, τ_v denotes year-month fixed effects, and $\varepsilon_{4,it}$ denotes the error term. Following Hattori and Yoshida (2023a), we estimate both the unconditional and conditional versions of Eq. (4). The unconditional version includes all trading days with and without the BOJ REIT purchase, where u_{it} and π_{it} take a value of zero when there is no REIT purchase. The conditional version is restricted to the days with the BOJ purchases.

Table 5 shows the estimation result of Eq. (8). Columns (1) and (2) show the results when we use the lunchtime return as a dependent variable. In the unconditional version (column (1)), the coefficient on the BOJ's security demand π is positive and statistically significant at the 1% level, although there is no direct interpretation of the coefficient because π is scaled by the variance-covariance matrix. For the conditional version (columns (2)), we find qualitatively similar results: Lunchtime returns are proportionally larger for a larger value of the BOJ demand π. Columns (3) and (4) show the estimation results when we use the afternoon return as a dependent variable. The results are largely consistent with those for lunchtime returns, but the unconditional flow effect is larger for afternoon returns than for lunchtime returns. The average

effect on afternoon returns for the entire sample period is 1.127 (column (3)), which is 1.82 times larger than the effect on lunchtime returns. Thus, the effect of the BOJ's purchase continues throughout the afternoon market. The result is similar when we exclude the trading days without intervention (column (4)). Thus, consistent with the hypothesis, the flow effect of REIT purchases on same-day REIT returns is positive.

Table 5 The flow effect of BOJ's REIT purchase on lunchtime returns

	Lunchtime Returns		Afternoon Returns	
	Unconditional	Conditional	Unconditional	Conditional
	(1)	(2)	(3)	(4)
π_{it}	0.489***	0.623**	1.201***	1.724***
	(0.0964)	(0.295)	(0.213)	(0.421)
u_{it}	2.042	0.997	8.702*	2.077
	(1.622)	(3.356)	(5.129)	(6.675)
Constant	-0.000260***	-0.000283***	-7.68e-05**	-0.000268***
	(1.48e-05)	(2.49e-05)	(2.87e-05)	(3.62e-05)
REIT fixed effects	Yes	Yes	Yes	Yes
Year-month fixed effects	Yes	Yes	Yes	Yes
Observations	74,160	23,939	74,160	23,939
R-squared	0.025	0.033	0.023	0.030

Note: This table shows the results of the panel regressions when lunchtime and afternoon returns are used as the dependent variable. u_{it} denotes the amount of the BOJ's purchase for each REIT, and π_i denotes the BOJ's security demand measure adjusted for the variance-covariance matrix. Standard errors, clustered by stock tickers, are shown in parentheses. The period is from November 2014 to December 2021.

5. Impact on Public Equity Offerings and Capital Investment

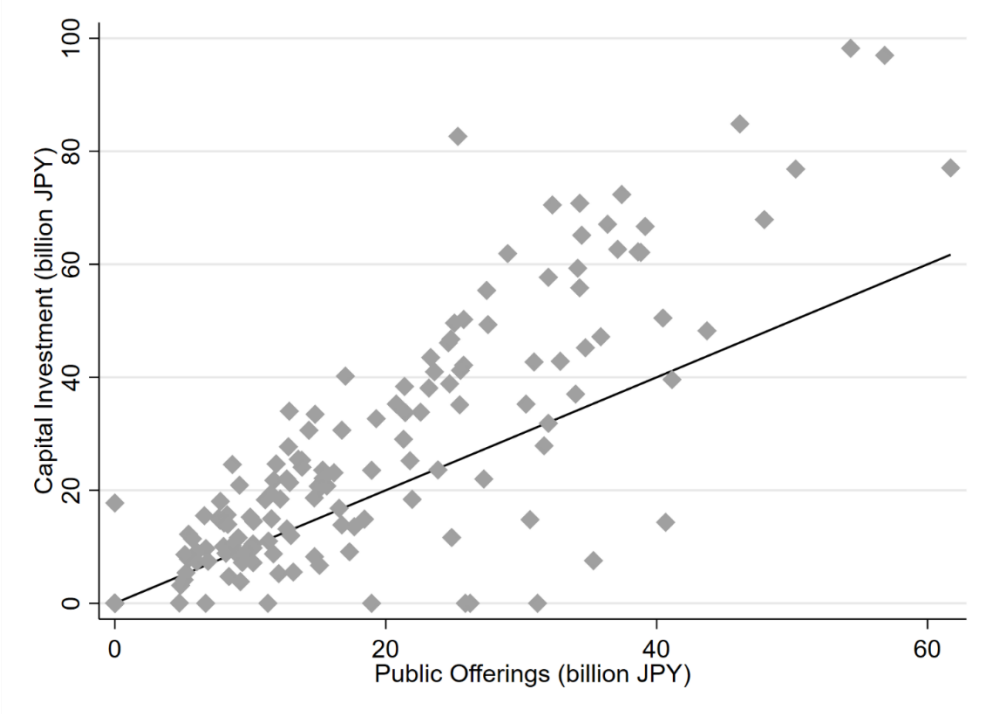
5.1 The feature of REIT Equity Public Offering

We test whether REITs issue a larger amount of equity (investment units) to finance capital investment in response to the BOJ's REIT purchase. If they do, the results provide direct evidence that this unconventional monetary program satisfies its first objective of stimulating firms' spending by decreasing funding costs.

We constructed monthly data on the amount of public offering for REIT i in month t (PO_{it}) and the amount of capital investment associated with this PO ($Invest_{it}$), using the information on each REIT's website. As we explain in Section 2 and Appendix A, there is usually a direct relationship between a REIT's PO and capital investment, typically property purchase. At the same time, there is a certain degree of divergence because property purchases are usually leveraged with debt financing, and thus, the investment amount is greater than the associated equity amount. Alternatively, part of equity can be used for non-investment purposes such as debt repayment.

Figure 4 shows the scatter plot of the capital investment amount against the associated public equity offering amount. There is a strongly positive relationship between these two variables, but the correlation is imperfect because of the abovementioned reasons. Observations can be above the 45-degree line due to leverage and below the line due to non-investment uses.

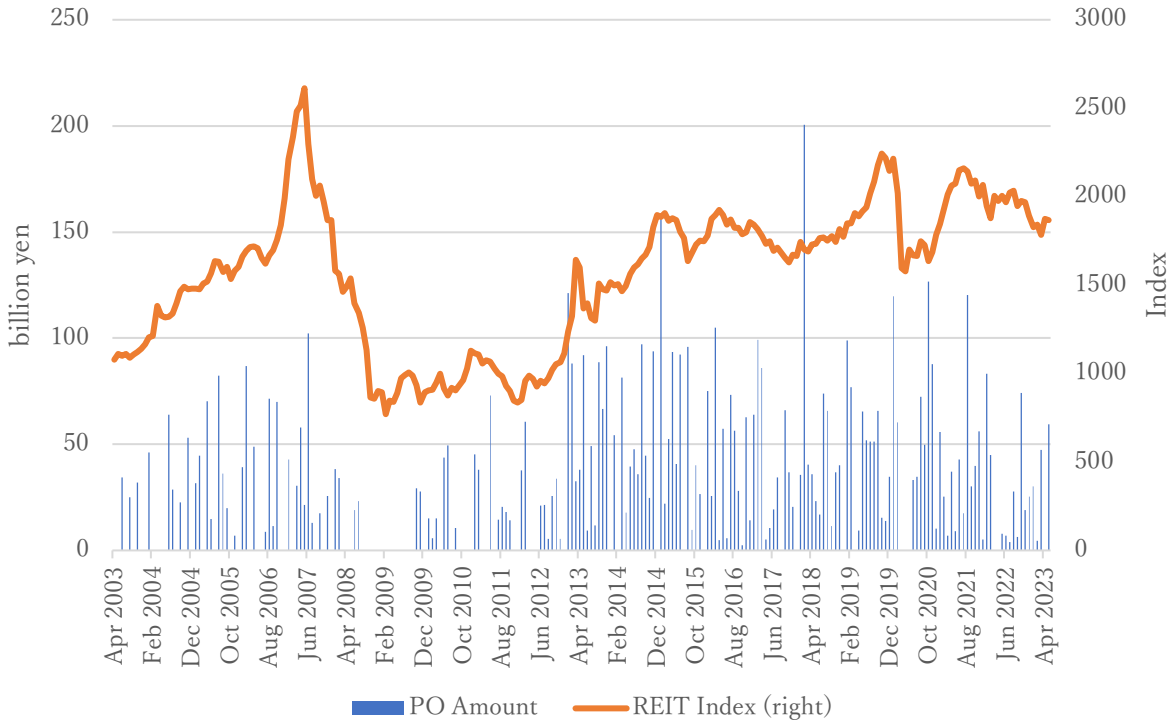
Figure 4 Capital Investment and the Associated Public Equity Offering



This figure shows the scatter plot of the capital investment amount against the associated public equity offering amount between November 2014 and March 2020. The solid line is a 45-degree line.

The BOJ's potential impact on POs and capital investment is due to its impact on REIT's cost of capital. Figure 5 shows the amount of REIT POs and the REIT price index between April 2003 and May 2023. The REIT index, which is inversely related to the cost of capital, is positively correlated with PO amounts. Because the funds from POs are mainly used for capital investment, this positive correlation between the REIT index and POs suggests that Tobin's Q—the ratio of the market value of capital to its replacement cost—explains business investment. In other words, REITs tend to issue equity to acquire real assets when the cost of equity capital becomes lower than the expected rate of return to real assets.

Figure 5 Public Offerings and REIT Index



This figure depicts the amount of REIT public equity offerings (blue bars) and the Tokyo Stock Exchange REIT Index (the orange line on the right axis) between April 2003 and May 2023.

Because the BOJ REIT purchase program mitigates an increase in the cost of equity capital, it would support equity-financed capital investment. However, a challenge in estimating this effect is that the BOJ purchases REIT shares exactly when share prices drop and equity-financed capital investment tends to be less active. Unlike our return analysis, we cannot use post-morning responses because REITs will not change the PO schedule within a day. Thus, we use cross-sectional variations in the impact of the BOJ purchase.

5.2 The Effect on REIT Public Offering and Capital Investment

To test whether the BOJ REIT purchase affects REIT POs and capital investment by using both the BOJ allocation weight w_{it} and Barbon and Gianinazzi's (2019) measure of the BOJ's overall security demand measure π_{it}. We first estimate the following equation with two-way fixed effects:

$$PO_{it}^{k} = \alpha_5^k + \beta_5^k w_{it-1} + \gamma_5^k purchase_{t-1} + \delta_5^k w_{it-1} \times purchase_{t-1} + \eta_i + \tau_t + \varepsilon_{5,it}, \qquad (5)$$

where PO_{it}^{k} denotes the amount of a public offering by REIT i during month t, w_{it-1} denotes the lagged BOJ allocation weight, $purchase_{t-1}$ denotes the lagged BOJ's REIT purchase amount in trillion yen, and η_i and τ_t denote REIT and year-month fixed effects, respectively. We also estimate the following model for REIT capital investment amount:

$$Invest_{it}^{k} = \alpha_6^k + \beta_6^k w_{it-1} + \gamma_6^k purchase_{t-1} + \delta_6^k w_{it-1} \times purchase_{t-1} + \eta_i + \tau_t + \varepsilon_{6,it} \quad (6)$$

where $Invest_{it}^{k}$ denotes the amount of capital investment by REIT i during month t, usually for the acquisition of buildings. We focus on coefficient δ^k for the interaction term $w_{it-1} \times purchase_{t-1}$, which represents the one-month lagged increase in the allocation weight adjusted PO or investment for a one-billion-JPY larger purchase.

Table 6 shows the estimation results for Eq. (5) (columns (1) and (2)) and Eq. (6) (columns (3) and (4)). Coefficient δ^k the estimated coefficient is positive and statistically significant at the 5% level for all specifications, regardless of whether year-month fixed effects are included.

The coefficient on $purchase$ is negative though statistically insignificant, reflecting the

BOJ's countercyclical purchase rule. These results indicate that the BOJ purchase promotes PO and capital investment by target REITs with positive allocation weights, as intended by the BOJ.

Table 6 REIT public offerings and the unconditional average of BOJ's REIT demand measure

	PO		Investment	
	(1)	(2)	(3)	(4)
w_{it-1}	-7.656**	-7.656**	-10.88**	-10.88**
	(3.254)	(3.254)	(4.259)	(4.259)
$purchase_{t-1}$	-0.0306	-0.0306	-0.0566	-0.0566
	(0.0255)	(0.0255)	(0.0446)	(0.0446)
$w_{it-1} \times purchase_{t-1}$	1.101**	1.101**	1.428*	1.428*
	(0.507)	(0.507)	(0.712)	(0.712)
Constant	1.110***	1.110***	1.627***	1.627***
	(0.162)	(0.162)	(0.286)	(0.286)
REIT fixed effects	Yes	Yes	Yes	Yes
Year-month fixed effects	No	Yes	No	Yes
Observations	2,560	2,560	2,560	2,560
R-squared	0.033	0.046	0.037	0.050

Note: This table shows the results of the monthly panel regression for the amount of REIT public offerings (columns 1 and 2) and capital investment (columns 3 and 4) on the lagged BOJ allocation weight w, the lagged amount of BOJ purchase $purchase$, the interaction of these two variables $w \times purchase$, and two-way fixed effects between November 2014 and March 2000. Standard errors, clustered by REIT tickers, are shown in parentheses.

We also estimate the following equations that use the lagged BOJ's security demand measure π_{it-1}, which includes spillovers to non-target REITs through the variance-covariance matrix of REIT returns.

$$PO_{it}^{k} = \alpha_7^k + \beta_7^k \pi_{it-1} + \gamma_7^k u_{it-1} + \eta_i + \tau_t + \varepsilon_{7,it}, \quad (7)$$

$$Invest_{it}^{k} = \alpha_8^k + \beta_8^k \pi_{it-1} + \gamma_8^k u_{it-1} + \eta_i + \tau_t + \varepsilon_{8,it}, \quad (8)$$

Table 7 shows the estimation results. Neither the contemporaneous nor lagged measure of the BOJ's security demand has a statistically significant coefficient. Once we include non-target REITs based on variance-covariance weights, the BOJ's purchase does not affect REIT POs and investment significantly. Thus, the BOJ REIT program affects REIT financing and investment decisions directly for target REITs but not indirectly for non-target REITs.

Table 7 REIT public offerings and the unconditional average of BOJ's REIT demand measure

	PO		Investment	
	(1)	(2)	(3)	(4)
π_{it-1}	-667.1	-584.6	-686.9	-2,731
	(1,018)	(2,876)	(1,735)	(3,680)
u_{it-1}		-0.00260		0.0644
		(0.0863)		(0.107)
Constant	1.016***	1.017***	1.345***	1.307***
	(0.181)	(0.190)	(0.308)	(0.320)
REIT fixed effects	Yes	Yes	Yes	Yes
Year-month fixed effects	Yes	Yes	Yes	Yes
Observations	2,560	2,560	2,560	2,560
R-squared	0.044	0.044	0.049	0.050

Note: This table shows the results of the monthly panel regression for the amount of REIT public offerings (columns 1 and 2) and capital investment (columns 3 and 4) on the contemporaneous and lagged monthly average BOJ demand measure π, the REIT purchase amount u, and two-way fixed effects between November 2014 and March 2000. Standard errors, clustered by REIT tickers, are shown in parentheses.

6. Conclusion

Understanding corporate investment under unconventional monetary policy is of paramount importance. This study focuses on the Bank of Japan's unique REIT share purchase program and analyzes REIT returns, public equity offerings, and capital investment. An advantage of using Japanese REITs is that they frequently raise equity capital to finance pre-specified real asset purchases. We first show that the BOJ provides put-option-like downside protection to the REIT market by submitting buy orders during lunchtime after observing a significantly negative cumulative overnight-morning return. This state-contingent REIT purchase has a significant positive effect on the post-purchase intraday returns of the targeted REITs and the entire REIT market. Because the BOJ's goal is to stimulate corporate spending by lowering financing costs, we further estimate the effect of the REIT purchase on public equity offerings and capital investment. Conditional on the BOJ purchase, a target REIT is more likely to issue a larger amount of equity shares and purchase more real assets. This result provides evidence of the real effect of this unconventional monetary program.

References

Avouyi-Dovi, S., and Idier, J. 2012. The impact of unconventional monetary policy on the market for collateral: The case of the French bond market. *Journal of Banking & Finance* 36(2), 428-438.

Barbon, A. and Gianinazzi, V. 2019. Quantitative Easing and Equity Prices: Evidence from the ETF Program of the Bank of Japan. *The Review of Asset Pricing Studies* 9 (2), 210–255.

Bauer, MD., Bernanke, BS., and Milstein, E. 2023. Risk Appetite and the Risk-Taking Channel of Monetary Policy. *Journal of Economic Perspectives* 37 (1): 77-100.

Bernanke, B. and Gertler, M. 2001. Should Central Banks Respond to Movements in Asset Prices? *The American Economic Review* 91 (2), 253–257.

Borio, C., and Zabai, A., 2016. Unconventional monetary policies: a re-appraisal, *BIS working papers* no. 570, july 2016.

Boyarchenko, N, Fuster, A, and Lucca, DO. 2019. Understanding Mortgage Spreads. REVIEW OF FINANCIAL STUDIES 32 (10): 3799-3850.

Cieslak, A., Vissing-Jorgensen, A. 2021. The Economics of the Fed Put. *The Review of Financial Studies* 34 (9), 4045-4089.

Chakraborty, I., Goldstein, I., and MacKinlay, A. 2019. Monetary Stimulus and Bank Lending. *Journal of Financial Economics.*

Charoenwong, B., Morck, R., and Wiwattanakantang, Y. 2021. Bank of Japan Equity Purchases: The (Non-)Effects of Extreme Quantitative Easing. Review of Finance 25(3), 731-743.

Claus, E., Claus, I., and Krippner, L. 2018. Asset market responses to conventional and unconventional monetary policy shocks in the United States. *Journal of Banking & Finance* 97: 270-282.

D'Amico, S., English, W., López-Salido, D. and Nelson, E. 2012. The Federal Reserve's Large-scale Asset Purchase Programmes: Rationale and Effects. *The Economic Journal* 122: 415-446.

Dedola, L., Georgiadis, G., Gräb, J., and Mehl, A. 2021. Does a big bazooka matter? Quantitative easing policies and exchange rates. *Journal of Monetary Economics* 117:489–506,

Ferrari, M., Kearns, J., and Schrimpf, A. 2021. Monetary policy's rising FX impact in the era of ultra-low rates. *Journal of Banking & Finance* 129, 106142

Galariotis, E., Makrichoriti, P., and Spyrou, S. 2018. The impact of conventional and unconventional monetary policy on expectations and sentiment. *Journal of Banking & Finance* 86, 1-20.

Gambacorta L, Hofmann B, Peersman G (2014) The effectiveness of unconventional monetary policy at the zero lower bound: a cross-country analysis. *Journal of Money Credit and Banking* 46(4):615–642

Gambetti, L., and Musso, A. 2020. The effects of the ECB's expanded asset purchase programme. *European Economic Review* 130:1

Gan, J. 2007. Collateral, debt capacity, and corporate investment: Evidence from a natural experiment. *Journal of Financial Economics* 85 (3): 709-734.

Greenwood, R., Vayanos, D. 2014. Bond Supply and Excess Bond Returns. *Review of Financial Studies* 27(3), 663–713.

Guidolin, M., Orlov, A.G., and Pedio, M. 2017. The impact of monetary policy on corporate bonds under regime shifts. *Journal of Banking & Finance* 80:176-202.

Hamilton, J.D. 2018. The Efficacy of Large-Scale Asset Purchases When the Short-term Interest Rate is at its Effective Lower Bound. *Brookings Papers on Economic Activity* 49(2 (Fall)), 543-554.

Hancock, D. and Passmore, W. 2011. Did the Federal Reserve's MBS purchase program lower mortgage rates? *Journal of Monetary Economics* 58 (5): 498-514.

Harada, K., and Okimoto, T. 2021. The BOJ's ETF Purchases and Its Effects on Nikkei 225 Stocks. *International Review of Financial Analysis* 77, 101826.

Hattori, T. 2020. The Impact of Quantitative and Qualitative Easing with Yield Curve Control on the Term Structure of Interest Rates: Evidence from Micro-Level. *Economics Letters*, 109347.

Hattori, T. and Takahashi, S. 2022. Discriminatory versus uniform auctions under non-competitive auction: Evidence from Japan. Working Paper.

Hattori, T. and Yoshida, J. 2022. The Bank of Japan as a Real Estate Tycoon: Large-Scale REIT Purchases. In Leung, K.Y. eds., *Handbook of Real Estate and Macroeconomics*, Edward Elgar Publishing.

Hattori, T. and Yoshida, J. 2023a. The impact of Bank of Japan's exchange-traded fund purchases, *Journal of Financial Stability* 65: 101102.

Hattori, T. and Yoshida, J. 2023b. Yield Curve Control. *International of Central Banking* 19(5):403-438.

Henseler, K., and Rapp, M.S. 2018. Stock market effects of ECB's Asset Purchase Programmes: Firm-level evidence. *Economics Letters* 169, 7–10.

Jansen, D.W. and Zervou, A. 2017. The time-varying effect of monetary policy on stock returns. *Economics Letters* 160, 54–58.

Kapoor, S. and Peia, O. 2021. The impact of quantitative easing on liquidity creation. *Journal of Banking & Finance* 122:105998.

Kholodilin, K., Montagnoli, A., Napolitano, O., and Siliverstovs, B. 2009. Assessing the impact of the ECB's monetary policy on the stock markets: A sectoral view. *Economics Letters* 105(3), 211–213.

Krishnamurthy, K., and Vissing-Jorgensen, A. 2011.The Effects of Quantitative Easing on Interest Rates. *Brookings Papers on Economic Activity*, Fall 2011

Krishnamurthy, K., and Vissing-Jorgensen, A. 2013. The Ins and Outs of LSAPs. *Kansas City Federal Reserve Symposium on Global Dimensions of Unconventional Monetary Policy*.

Lutz, C. 2015. The impact of conventional and unconventional monetary policy on investor sentiment. *Journal of Banking & Finance* 61, 89-105.

Modigliani, F., and Sutch, R. 1966. Innovations in Interest Rate Policy. *The American Economic Review*, 56(2), 178–197.

Neely, C.J. 2015. Unconventional monetary policy had large international effects. *Journal of Banking & Finance* 52, 101-111.

Newey, W., and West, K. 1987. A Simple, Positive Semi-definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. *Econometrica* 55(3), 703–08.

Nozawa, Y, and Qiu, Y. 2021. Corporate Bond Market Reactions to Quantitative Easing During the COVID-19 pandemic. *Journal of Banking & Finance* 133, 106153.

Peek, J., and Rosengren, ES. 2000. Collateral Damage: Effects of the Japanese Bank Crisis on Real Activity in the United States. *American Economic Review*, 90 (1): 30-45.

Peng, Y., and Zervou. 2022. Monetary policy rules and asset prices in a segmented markets model. Working Paper.

Schenkelberg, H., Watzka, S. 2013. Real effects of quantitative easing at the zero lower bound: structural VAR-based evidence from Japan. *Journal of International Money and Finance* 33:327–357

Shirakawa, M. 2010. Japan's Economy and Monetary Policy. Speech at the Kisaragi-kai Meeting in Tokyo (November 4, 2010), Bank of Japan.

Stroebel, J. and Taylor, JB. 2012. Impact of the Federal Reserve's Mortgage-Backed Securities Purchase Program. INTERNATIONAL JOURNAL OF CENTRAL BANKING 8 (2): 1-42.

Vayanos, D., and Vila, J. L. 2009. A preferred-habitat model of the term structure of interest rates. NBER Working Paper 15487, 1–2.

Wallace, N. 1981. A Modigliani-Miller Theorem for Open-Market Operations. *American Economic Review*, 71(3): 267-274.

Weale, M., Wieladek, T. 2016. What are the macroeconomic effects of asset purchases? *Journal of Monetary Economics* 79:81–93

Appendix A: Example Announcements of REIT Equity Finance and Asset Acquisitions

Nippon Building Fund Inc., Notice Concerning Issue of New Investment Units and Secondary Offering of Investment Units, October 9, 2020. Available at https://www.nbf-m.com/nbf_e/ir/index.html?cate=1&year=2020.

October 9, 2020

To All Concerned Parties

Name of REIT Issuer:
Nippon Building Fund Inc.
Koichi Nishiyama, Executive Director
(TSE Code: 8951)
Contact:
Asset Management Company
Nippon Building Fund Management Ltd.
Yoshiyuki Tanabe, President and CEO
Person to Contact:
Yasushi Yamashita, General Manager
(TEL. +81-3-3516-3370)

Notice Concerning Issue of New Investment Units
and Secondary Offering of Investment Units

Nippon Building Fund Inc. ("NBF") provides notice of its decision at the board of directors meeting held on October 9, 2020 to issue new investment units ("Units") and conduct a secondary offering of Units, as outlined below:

Description

1. Issue of New Units through a Public Offering

(1) Total number of new Units to be offered: 229,000 units

(2) Paid-in amount (issue amount): To be determined
(The issue amount for the new Units will be determined by a resolution of the Board of Directors at a meeting to be held on any day from October 20, 2020 (Tuesday) through October 22, 2020 (Thursday) (inclusive) (the "Pricing Date") in accordance with the methods provided for in Article 25 of the Regulations Concerning Underwriting of Securities set forth by the Japan Securities Dealers Association.)

(3) Total paid-in amount (aggregate issue amount): To be determined

(4) Offering method: Offerings to be made simultaneously within Japan and abroad
(i) Domestic Primary Offering
The offering in Japan (the "Domestic Primary Offering") will be a primary offering in which all Units subject to the Domestic Primary Offering will be underwritten and purchased by domestic underwriters (the "Domestic Underwriters"). Certain of the underwriters will serve as joint lead managers ("Joint Lead Managers").
(ii) International Offering
The international offering (the "International Offering") will be an offering in

international markets, mainly in the U.S., Europe and Asia. However, within the U.S., the Units will be sold only to qualified institutional buyers in reliance on Rule 144A under the U.S. Securities Act of 1933, as amended. All Units subject to the International Offering will be underwritten severally and not jointly in the total amount by international managers (the "International Managers", and collectively with the Domestic Underwriters, the "Underwriters").
Although NBF plans to offer 171,000 units in the Domestic Primary Offering and 58,000 units in the International Offering, the actual number of Units to be offered as described in (i) and (ii) above will be determined on the Pricing Date by taking into consideration, among others factors, market demand of the units.
The joint global coordinators of the Domestic Primary Offering and International Offering, as well as the secondary offering through over-allotment stated in 2. below, are hereinafter referred to as the "Joint Global Coordinators".
The issue price for the Domestic Primary Offering and the International Offering (the "offer price") will be determined on the "Pricing Date", taking into consideration, among other factors, market demand of the units and will be determined in accordance with the methods provided for in Article 25 of the Regulations Concerning Underwriting of Securities set forth by the Japan Securities Dealers Association, based on the closing price for ordinary transactions of Units of NBF on the Tokyo Stock Exchange on the Pricing Date (or if no closing price is available on that date, then the closing price on the most recent date prior to the Pricing Date) multiplied by a factor of 0.90 to 1.00 (amounts less than ¥1 shall be rounded down) as provisional pricing.

(5) Underwriters' fees: An underwriting fee will not be paid. Instead, underwriting fees applicable to the issue will be the difference between the total issue price (aggregate offer price) for the Domestic Primary Offering and International Offering and the total paid-in amount (aggregate issue amount) to be paid by the Underwriters to NBF.

(6) Application unit: At least one Unit or in multiples of one Unit.

(7) Application period: (Domestic Primary Offering) From the business day immediately following the Pricing Date to the second business day following the Pricing Date.

(8) Payment date: A day between October 26, 2020 (Monday) and October 28, 2020 (Wednesday) (inclusive), which shall be the fourth business day following the Pricing Date.

(9) Delivery and Settlement date: The business day immediately following the payment date described in (8) above.

(10) The paid-in amount (issue amount) and other matters necessary for this issue of new Units will be determined at a board of directors meeting to be held hereafter.

(11) The Domestic Primary Offering among the aforementioned items will be subject to the effectiveness of the securities registration statement in accordance with the Financial Instruments and Exchange Act.

(12) In the event the International Offering is suspended, the Domestic Primary Offering shall also be suspended. In the event the Domestic Primary Offering is suspended, the International Offering shall also be suspended.

2. Secondary Offering (through Over-Allotment) (Please refer to <Reference> 1. below.)

(1) Seller and number of Units to be offered: One of the Joint Lead Managers: 11,500 units
The number of Units to be offered represents an upper limit which may be reduced, or the secondary offering through over-allotment itself may be suspended, depending on demand conditions of the Domestic Primary Offering. The number of Units to be offered will be determined at the board of directors meeting held on the Pricing Date by taking into consideration the demand of the units in the Domestic Primary Offering.

(2) Offer price: To be determined on the Pricing Date. Such offer price will be the same price as the issue price (offer price) for the Domestic Primary Offering.

(3) Total amount of offer price: To be determined

(4) Offering method: In conducting the Domestic Primary Offering, and after considering, among other factors, demand conditions of the units, one of the Joint Lead Managers of the Domestic Primary Offering, will undertake the sale of Units in Japan borrowed from a certain NBF unitholder with 11,500 units as the upper limit.

(5) Application unit: At least one Unit or in multiples of one Unit.

(6) Application period: Identical to the application period for the Domestic Primary Offering.

(7) Delivery and Settlement date: Identical to the delivery and settlement date for the Domestic Primary Offering.

(8) The offer price and other matters necessary for this offering of Units will be determined at a board of directors meeting to be held hereafter.

(9) The aforementioned items shall be subject to the effectiveness of the securities registration statement in accordance with the Financial Instruments and Exchange Act.

(10) In the event the Domestic Primary Offering is suspended, the secondary offering through over-allotment shall also be suspended.

3. Issue of New Units by Third Party Allocation (Please refer to <Reference> 1. below.)

(1) Total number of new Units to be offered: 11,500 units

(2) Paid-in amount (issue amount): To be determined at a board of directors meeting to be held on the Pricing Date. Such paid-in amount (issue amount) will be equivalent to the paid-in amount (issue amount) for the Domestic Primary Offering.

(3) Total paid-in amount (aggregate issue amount): To be determined

(4) Allottee and number of Units: One of the Joint Lead Managers: 11,500 units

(5) Application unit: At least one Unit or in multiples of one Unit

(6) Application period (Application date): Any day during the period from November 5, 2020 (Thursday) through November 9, 2020 (Monday) (inclusive).
Such date shall be the seventh business day immediately following the payment date of the Domestic Primary Offering.

(7) Payment date: A day during the period from November 6, 2020 (Friday) through November

10, 2020 (Tuesday) (inclusive).
Such date shall be the eighth business day immediately following the payment date of the Domestic Primary Offering.

(8) Issue of any Units not applied for on or before the last date of the application period (the application date) set forth in (6) above will be cancelled.

(9) The paid-in amount (issue amount) and other matters necessary for this issue of new Units will be determined at the board of directors meeting to be held hereafter.

(10) The aforementioned items shall be subject to the effectiveness of the securities registration statement in accordance with the Financial Instruments and Exchange Act.

(11) In the event the Domestic Primary Offering is suspended, the issuance of new units by third party allocation shall also be suspended.

Nippon Building Fund Inc., Notice of Acquisition and Commencement of Lease of Domestic Assets (Acquisition of Shinjuku Mitsui Building and Gran Tokyo South Tower), October 9, 2020

October 9, 2020

To All Concerned Parties

Name of REIT Issuer:
Nippon Building Fund Inc.
Koichi Nishiyama, Executive Director
(TSE Code: 8951)
Contact:
Asset Management Company
Nippon Building Fund Management Ltd.
Yoshiyuki Tanabe, President and CEO
Person to Contact:
Yasushi Yamashita, General Manager
(TEL. +81-3-3516-3370)

Notice of Acquisition and Commencement of Lease of Domestic Assets (Acquisition of Shinjuku Mitsui Building and Gran Tokyo South Tower)

Nippon Building Fund Inc. ("NBF") and Nippon Building Fund Management Ltd. ("NBFM"), to which NBF entrusts asset management services, hereby provide notice of the decision on October 9, 2020 to acquire and lease certain assets as follows:

Furthermore, the seller of Shinjuku Mitsui Building is Mitsui Fudosan Co., Ltd., the major shareholder of NBFM ("Mitsui Fudosan"). Mitsui Fudosan is an interested party under Article 201 of the Investment Trust Act ("ITA") as well as Article 123 of the Enforcement Order of the ITA. As such, NBFM has obtained necessary prior approval by the board of directors of NBF in connection with the acquisition of Shinjuku Mitsui Building subject to Article 201-2 of the ITA.

Description

1. Outline of the Acquisition

Names of Assets	(1) Shinjuku Mitsui Building (2) Gran Tokyo South Tower
Acquisition Price	(1) ¥ 170,000,000,000 (2) ¥ 47,000,000,000 ¥ 217,000,000,000 in total (Miscellaneous acquisition costs, adjusted amount of fixed assets tax and city-planning tax as well as consumption tax are excluded.)
Seller	Mitsui Fudosan Co., Ltd.
Date of Contract	October 9, 2020
Date of Acquisition	January 8, 2021 (scheduled)
Acquisition Funding	Proceeds of issuing new investment units (*1), loans, own funds (tentative)
Payment Method	One time, lump-sum payment at the time of acquisition
Intermediary	None

*1 Please refer to the "Notice Concerning Issue of New Investment Units and Secondary Offering of Investment Units", which has also been released today.

2. Reason for Acquisition and Lease, and Outline of Assets to be Acquired

<Shinjuku Mitsui Building>

1. Reason for Acquisition and Lease

The acquisition and leasing are being undertaken with the intention of enhancing NBF's portfolio of properties in the 23 wards of Tokyo in accordance with the asset management objectives and policies set forth in NBF's Articles of Incorporation. In pursuing the acquisition set forth herein, NBF deemed the following points especially attractive:

① Location

The property offers high transport convenience, located within a six-minute walk from the west exit of Shinjuku Station on the JR lines, Odakyu line and Keio line, a two-minute walk from Nishi-shinjuku Station on the Tokyo Metro Marunouchi line, and a one-minute walk from Tochomae Station on the Toei Subway Oedo line. The property is considered a landmark office building located in Nishi-shinjuku. The Nishi-shinjuku area is one of the major office areas in Tokyo and includes high-rise buildings and is expected to be further developed as an office area due to the increase of new office building supply given the recent redevelopment in the neighboring area.

② Building and Facilities

The property was completed in 1974 (building age of 46 years), but it maintains competitiveness through various measures taken since 2000. For example, interiors such as the entrance lobby, elevator halls, and hallways in common areas have been renovated, and basic specification of the property such as air conditioners and electrical capacity has been enhanced. Furthermore, NBF invested in business contingency plans such as the introduction of a 72-hour emergency generator and large-scale vibration control device following the Great East Japan earthquake. The property has specifications such as a rentable standard floor area of approximately 254 *tsubo* (840m^2) of pillar-free space consisting of two zones allowing for flexible office layouts, a ceiling height of 2,560mm (with a raised floor of 80mm), an air conditioning system which allows adjustment of temperatures in four blocks split into 20 zones per floor, OA breaker capacity of 50VA/m^2, and two-line high voltage power supply.

2. Outline of the Asset

Name of Asset	Shinjuku Mitsui Building
Type of Specified Asset	Real Property
Type of Ownership	Land: Ownership interest Building: Ownership interest
Location	(Description in Real Property Registry) Land: 1 Nishishinjuku 2-chome, Shinjuku-ku, Tokyo Building: 1 Nishishinjuku 2-chome, Shinjuku-ku, Tokyo (Street Address) 1-1 Nishishinjuku 2-chome, Shinjuku-ku, Tokyo

Use (Description in Real Property Registry)	Offices
Area (Description in Real Property Registry)	Land: site area:14,449.38 m^2 Building: total floor space: 179,696.87 m^2
Structure (Description in Real Property Registry)	Steel framed reinforced concrete structure, flat roof, 56 floors above ground and 3 floors below ground
Completion of Construction (Description in Real Property Registry)	September 30, 1974
Matters Related to Earthquake Resistance	Earthquake Probable Maximum Loss ("PML") 1.3% (according to the earthquake risk evaluation report prepared by Engineering & Risk Services Corporation)
Existence of Secured Interests (liens)	None.
Appraisal Value (Date of Valuation)	¥173,000,000,000 (August 31, 2020)
Appraiser	Daiwa Real Estate Appraisal Co., Ltd.
Description of Tenants	Mitsui Fudosan will be the sole tenant as NBF intends to lease the entire Property to Mitsui Fudosan. Mitsui Fudosan will sub-lease the same spaces to its sub-lessees. In addition, the subtenants meet the selection criteria described in NBF's Annual Securities Report dated on September 29, 2020, which is referred to in the "Report regarding the operation system of the Real Estate Investment Trust Issuer" dated September 29, 2020. The situation of the tenant as of July 31, 2020 is as follows.
Total number of End Tenants	93 companies (67 general business companies, 25 stores, one other company)
Total rental revenues	Approximately 10,233 million yen / year (*2)
Lease deposit	Approximately 11,996 million yen (*2)
Total rentable area	101,255.03 m^2
Total rented area	99,013.96 m^2
Occupancy Rate	97.8%
Other Special Matters	・The property uses spraying materials containing asbestos that should be checked and recorded. The spraying materials, however, are in a stable state and do not currently pose a health hazard. NBF will remove or control them depending on the situation.

*2 Total rental revenues and lease deposit were calculated based on the rent roll (as of July 31, 2020) received from the seller, and differ from the amount NBF receives from Mitsui Fudosan after delivery of the property.

<Gran Tokyo South Tower>

1. Reason for Acquisition and Lease

The acquisition and leasing are being undertaken with the intention of enhancing NBF's portfolio of properties in the 23 wards of Tokyo in accordance with the asset management objectives and policies set forth in NBF's Articles of Incorporation. In pursuing the acquisition set forth herein, NBF deemed the following points especially attractive:

① Location

The property is directly connected to JR Tokyo Station, and thus easily accessible on foot from multiple Tokyo Metro Toei Subway lines and enjoys excellent transportation accessibility. The property is located in Marunouchi, where multiple redevelopment projects are scheduled, including the ongoing Yaesu 2-chome Central District Category-I Urban District Redevelopment project near the property. Therefore, it can be evaluated that the location is in one of the best business area in Japan and the property is expected to capture stable office demand for a long time

② Building and Facilities

The property's specifications also make it highly competitive in terms of leasing due to being a relatively new building (age of 13 years) and having a rentable standard floor area of approximately 626 *tsubo* (2,069m^2), a ceiling height of 2,950mm (with a raised floor of 150mm), and electrical capacity of 60VA. The property is also has BCP functions such as vibration control device using oil dampers, an emergency power supply system, an emergency power receiving system and a stock of emergency supplies.

2. Outline of the Asset

Name of Assets	Gran Tokyo South Tower
Type of Specified Asset	Real Property
Type of Ownership	Land: Co-Ownership interest : approximately 51.17% of Ownership(1,800.85m^2), quasi-co-ownership: approximately 5.22% of leasehold right (20,778.92m^2) Building: Compartmentalized co-ownership interest (from fifth to ninth floor 10,853.40 m^2) (compartmentalized interest: approximately 13.33%)
Location	(Description in Real Property Registry) Land: Ownership: 26-3, 26-4, and 26-11, Marunouchi 1-chome, Chiyoda-ku, Tokyo, 13-1, 13-2, 13-3, and 19 other parcels of land, Yaesu 2-chome, Chuo-ku, Tokyo Leasehold: the six plots above and other nineteen plots Building: 26-3, 26-4, and 26-11, Marunouchi 1-chome, Chiyoda-ku, Tokyo,13-1, 13-2, 13-3, and eight other parcels of land, Yaesu 2-chome, Chuo-ku, Tokyo (Street Address) 9-2, Marunouchi 1-chome, Chiyoda-ku, Tokyo
Use (Description in listed in Real Property Registry)	Offices and storage

Area (Description in Real Property Registry)	Land: site area:20,778.92 m^2 (entire site of Gran Tokyo Complex) Building: total floor space: 137,662.87 m^2 (entire building of Gran Tokyo South Tower)
Structure (Description in Real Property Registry)	Steel frame and steel framed reinforced concrete structure, flat roof, 42 floors above ground and 4 floors below ground
Completion of Construction (Description in Real Property Registry)	October 10, 2007
Matters Related to Earthquake Resistance	Earthquake PML 1.0% (according to the earthquake risk evaluation report prepared by Engineering & Risk Services Corporation)
Existence of Secured Interests (liens)	None.
Appraisal Value (Date of Valuation)	¥48,500,000,000 (August 31, 2020)
Appraiser	Daiwa Real Estate Appraisal Co., Ltd.
Description of Tenants	The subtenants meet the subtenant selection criteria described in NBF's Annual Securities Report dated on September 29, 2020, which is referred to in the "Report regarding the operation system of the Real Estate Investment Trust Issuer" dated September 29, 2020. The tenancy situation of the Property as of July 31, 2020 is as follows.
Total number of Tenants	4 companies (4 general business companies)
Total rental revenues	Approximately 1,785 million yen/ year (*3)
Lease deposit	Approximately 1,382 million yen (*3)
Total rentable area	10,955.29 m^2
Total rented area	10,955.29 m^2
Occupancy Rate	100%
Other Special Matters	・The property has been developed integrally with the adjacent Gran Tokyo North Tower, and the sites of the property and Gran Tokyo North Tower are certified as one estate under Building Standards Act as a complex ("Gran Tokyo Complex"). Certain regulations will be applied by regarding the complex as the site of this property (e.g., floor area ratio and building coverage) under Building Standards Act. ・As the leasehold of the Gran Tokyo Complex is jointly held by each unit owner and land owner, they are allowed to use the entire grounds in free. ・An agreement regarding the Gran Tokyo Complex was entered into among the unit owners of this property and Gran Tokyo North Tower. Other unit owners have a preferential negotiation rights in case of a transfer of compartmentalized ownership under such agreement. The property is held by unit owners and such owners who also own land are subject to management

	rules and agreements concerning each compartmentalized ownership as applicable. The management rules stipulate prohibition of separation and disposition of individual ownership space and land, while the agreements specify other unit owners' preferential negotiation rights when transferring compartmentalized ownership.

*3 Total rental revenues and lease deposit were calculated based on the rent roll (as of July 31, 2020) received from the seller and differ from the amount NBF receives after the delivery of the property.

3. Outline of Seller

①	Name	Mitsui Fudosan Co., Ltd.
②	Location	1-1, Nihonbashi Muromachi 2-chome, Chuo-ku, Tokyo
③	Name and Title of Representative	President and Chief Executive Officer Masanobu Komoda
④	Description of Business	Real estate
⑤	Capital	339,897 million yen (as of July 22, 2020)
⑥	Date of Establishment	July 15, 1941
⑦	Net Assets	2,498,239 million yen (as of June 30, 2020)
⑧	Total Assets	7,653,809 million yen (as of June 30, 2020)
⑨	Major Investor and Investment Ratio	The Master Trust Bank of Japan, Ltd. (trust account) 10.29%(as of March 31, 2020)
⑩	Relationship between NBF/Asset Manager and Mitsui Fudosan	
	Capital Relationship	Shareholder of NBFM (investment ratio: 46%, as of the date of this press release). Holds 47,630 investment units of NBF.
	Personnel	Assignor company of Asset Manager employees.
	Business Relationship	NBF's consignee concerning office management business, new tenant arranger, real estate broker, tenant of NBF's properties, etc..
	Related parties	Not a related party to NBF. Parent company of Asset Manager and a related party.

4. Status of Owners of the Properties

Name of Assets	Status of Owners of the Properties		
		Previous owner (seller)	Earlier previous owner
Shinjuku Mitsui Building	Corporate Name	Mitsui Fudosan Co., Ltd.	N/A
	Relationship with a specially interested party	Interested party of the Asset Manager	N/A
	History/Reason for acquisition	Newly constructed	N/A
	Acquisition Price	—	N/A
	Date of Acquisition	September 30, 1974	N/A
Gran Tokyo South Tower	Corporate Name	Mitsui Fudosan Co., Ltd.	Other than special interested party
	Relationship with a specially interested party	Interested party of the Asset Manager	—
	History/Reason for acquisition	Acquired for investment purposes	—
	Acquisition Price	Omitted, as the previous owner held the asset for over 1 year	—
	Date of Acquisition	February 22, 2013	—

5. Overview of Forward Commitments

The forward commitments (settlement/handover occurring one month after the execution of the contract) apply to the acquisitions of the above assets, and in case the sales contract is terminated due to a violation of contractual commitments by NBF, NBF shall be required to pay 10% of the sales price to the seller as a penalty. However, even if NBF has difficulties in raising the fund for the payment of the sales price, NBF will not have an obligation to pay such penalty due to the difficulty of such payment of the sales price because NBF will bear such obligation on the condition that the fund procurement of NBF is certain.

6. Forecasts of Operating Results for the Periods ending December 31, 2020 and June 30, 2021

For information on the impact of the current acquisition upon NBF's results of operations for the periods ending December 31, 2020 and June 30, 2021, please refer to the Company's press release dated as of the date hereof and titled "Notice Concerning Revision of Forecasts of Operating Results and Distributions Per Unit for the Periods ending December 31, 2020 and June 30, 2021".

7. Summary of Appraisal Reports

<Shinjuku Mitsui Building>

Property Name	Shinjuku Mitsui Building
Appraisal Value	¥173,000,000 thousand
Appraiser	Daiwa Real Estate Appraisal Co., Ltd.
Date of Valuation	August 31, 2020

Item				Breakdown (in thousands of yen)	Remarks
Appraisal value based on income method				173,000,000	Estimated by combining the appraisal values under the DCF method and the direct capitalization method
	Appraisal value based on direct capitalization method			174,000,000	
		(1) Operating Revenue ((i)- (ii))		11,097,187	
			(i) Effective gross income	11,448,068	Estimated based on income consisting of rents, common area charges, utility charges, parking rents, etc. which are deemed stable on a mid-and-long-term basis
			(ii) Losses from vacancy , etc.	350,881	Estimated based on vacancy rates which is deemed stable on a mid-and-long-term basis
		(2) Operating Expenses		3,942,477	
			Building Maintenance Costs/ Property Management Fees	1,456,166	Estimated based on past results verified applying the level of maintenance costs/property management fees for similar real properties
			Utilities Expenses	906,036	Estimated based on past results verified applying the level of utilities expenses for similar real properties
			Repair Expenses	42,517	Estimated based on the Engineering Report as well as the level of leasing expenses for similar real properties
			Leasing Expenses, etc.	87,130	Estimated based on the assumed turnover rate and the level of leasing expenses for similar real properties
			Taxes & Public Duties	1,439,148	Estimated based on actual taxes in fiscal 2020 etc.
			Insurance Premiums	11,481	Estimated based on insurance rates etc. for similar properties
			Other Expenses	0	-
		(3) Net Operating Income ((1)-(2))		7,154,710	
		(4) Investment Income from Temporary Deposits		103,877	Estimated applying investment return of 1.0%
		(5) Capital Expenditure		1,530,942	Estimated based on the Engineering Report as well as the level of renewal expenses for similar real properties
		(6) Net Income ((3)+(4)-(5))		5,727,645	
		(7) Capitalization Rate		3.3%	Estimated taking into consideration examples of transactions for similar real properties , as well as conditions e.g. location, building condition, rights, contractual terms etc. of the Property
	Appraisal value based on DCF method			172,000,000	
		Discount Rate		3.1%	Estimated based on comparison with examples of transactions for similar real properties as well as returns on financial assets adjusted by individual characteristics of the Property
		Terminal Capitalization Rate		3.4%	Estimated taking into consideration the characteristics of net income adopted in determining the capitalization rate as well as future uncertainty, liquidity and marketability
Integrated value based on cost method				206,000,000	
	Proportion of land			98.5%	
	Proportion of building			1.5%	

*Amounts less than one thousand yen are rounded to the nearest thousand.

Matters specifically considered in adjustment of estimated amounts and determination of appraisal value	None.

(Note) The maintenance fees and PM fees for the property are combined, as the disclosure of each fee on a separate basis may impact the businesses of the anticipated providers of building management and PM operations, as well as impair efficient outsourcing by NBF and harm the interests of unitholders.

<Gran Tokyo South Tower>

Property Name	Gran Tokyo South Tower
Appraisal Value	¥48,500,000 thousand
Appraiser	Daiwa Real Estate Appraisal Co., Ltd.
Date of Valuation	August 31, 2020

Item	Breakdown (in thousands of yen)	Remarks
Appraisal value based on income method	48,500,000	Estimated by combining the appraisal values under the DCF method and the direct capitalization method
Appraisal value based on direct capitalization method	49,200,000	
(1) Operating Revenue ((i)- (ii))	1,808,572	
(i) Effective gross income	1,864,425	Estimated based on income consisting of rents, common area charges, utility charges, parking rents, etc. which are deemed stable on a mid-and-long-term basis
(ii) Losses from vacancy , etc.	56,853	Estimated based on vacancy rates which is deemed stable on a mid-and-long-term basis
(2) Operating Expenses	413,685	
Building Maintenance Costs/ Property Management Fees	159,704	Estimated based on past results verified applying the level of maintenance costs/property management fees for similar real properties
Utilities Expenses	47,722	Estimated based on past results verified applying the level of utilities expenses for similar real properties
Repair Expenses	11,616	Estimated based on the Engineering Report as well as the level of leasing expenses for similar real properties
Leasing Expenses, etc.	14,792	Estimated based on the assumed turnover rate and the level of leasing expenses for similar real properties
Taxes & Public Duties	178,641	Estimated based on actual taxes in fiscal 2020 etc.
Insurance Premiums	1,124	Estimated based on insurance rates etc. for similar properties
Other Expenses	3,087	Includes common area rents
(3) Net Operating Income ((1)-(2))	1,394,887	
(4) Investment Income from Temporary Deposits	14,577	Estimated applying investment return of 1.0%
(5) Capital Expenditure	32,496	Estimated based on the Engineering Report as well as the level of renewal expenses for similar real properties
(6) Net Income ((3)+(4) (5))	1,376,967	
(7) Capitalization Rate	2.8%	Estimated taking into consideration examples of transactions for similar real properties , as well as conditions e.g. location, building condition, rights, contractual terms etc. of the Property
Appraisal value based on DCF method	48,200,000	
Discount Rate	2.5%	Estimated based on comparison with examples of transactions for similar real properties as well as returns on financial assets adjusted by individual characteristics of the Property
Terminal Capitalization Rate	2.9%	Estimated taking into consideration the characteristics of net income adopted in determining the capitalization rate as well as future uncertainty, liquidity and marketability
Integrated value based on cost method	41,500,000	
Proportion of land	91.9%	
Proportion of building	8.1%	

*Amounts less than one thousand yen are rounded to the nearest thousand.

Matters specifically considered in adjustment of estimated amounts and determination of appraisal value	None.

(Note) The maintenance fees and PM fees for the property are combined, as the disclosure of each fee on a separate basis may impact the businesses of the anticipated providers of building management and PM operations, as well as impair efficient outsourcing by NBF and harm the interests of unitholders.

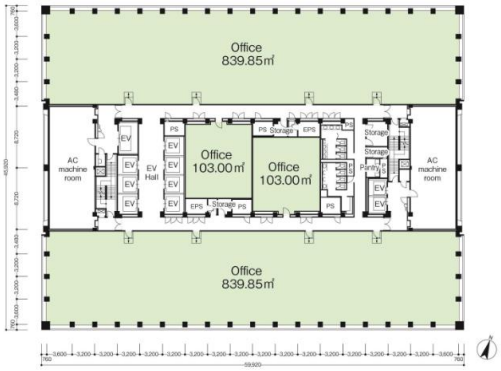
【Reference Material 1】 Map, Exterior Appearance, Standard Floor Plan, etc. of the Assets to be Acquired

1. Shinjuku Mitsui Building

Map

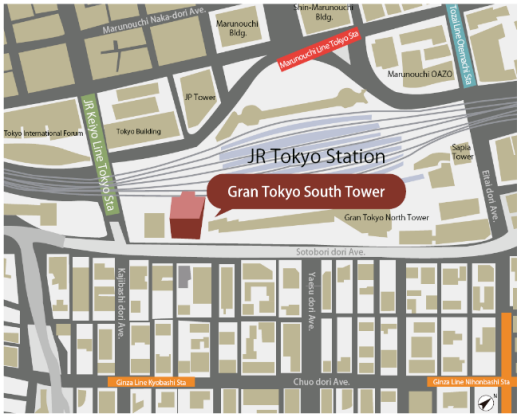
External Appearance

Standard Floor Plan



Gran Tokyo South Tower

Map

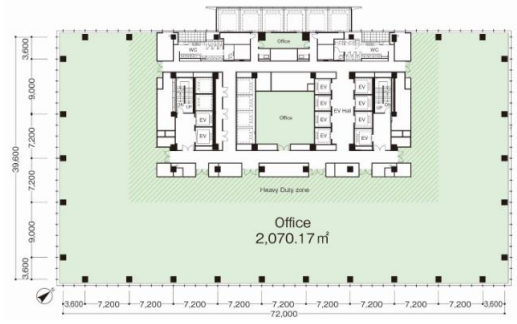


External Appearance

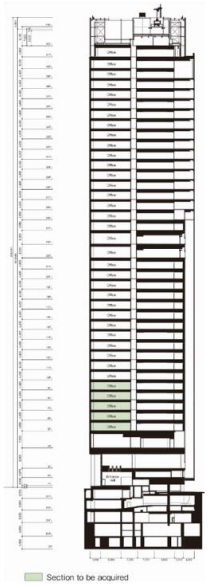
-14-

-15-

Standard Floor Plan



Cross Section



-16-

-17-

【Reference Material 2】 Summary of Portfolio after Acquisition of the Assets to be Acquired

Area	Property Name	Acquisition Price (¥ in thousands) (Note 1)	Percentage	Percentage of each area	Value (Real Estate Appraisal Value) (¥ in thousands) (Note 2)
Central 5 Wards	Shinjuku Mitsui Bldg.(Note 3)	170,000,000	12.3%	57.4%	173,000,000
	Roppongi T-CUBE	62,800,000	4.5%		63,800,000
	Gran Tokyo South Tower (Note 3)	47,000,000	3.4%		48,500,000
	Nishi-Shinjuku Mitsui Bldg.	45,271,040	3.3%		45,400,000
	Celestine Shiba Mitsui Bldg.	42,000,000	3.0%		51,700,000
	NBF Shinagawa Tower	36,300,000	2.6%		49,400,000
	Shiba NBF Tower	32,000,000	2.3%		29,800,000
	NBF Platinum Tower	31,000,000	2.2%		63,700,000
	NBF Minami-Aoyama Bldg.	31,000,000	2.2%		20,300,000
	NBF COMODO Shiodome	28,800,000	2.1%		36,100,000
	G-BASE TAMACHI	28,200,000	2.0%		28,300,000
	Toranomon Kotohira Tower	24,543,000	1.8%		35,800,000
	NBF Ochanomizu Bldg.	20,840,000	1.5%		14,300,000
	NBF Shibuya Garden Front	20,269,000	1.5%		34,000,000
	NBF Ginza Street Bldg.	17,000,000	1.2%		17,500,000
	Shinjuku Mitsui Bldg. No.2	16,285,400	1.2%		20,200,000
	Kowa Nishi-Shinbashi Bldg. B	13,473,200	1.0%		15,200,000
	River City M-SQUARE	13,350,000	1.0%		14,000,000
	NBF Toranomon Bldg.	13,337,000	1.0%		17,900,000
	Shinbashi M-SQUARE	11,900,000	0.9%		15,300,000
	NBF ALLIANCE	9,126,000	0.7%		12,300,000
	Yotsuya Medical Bldg.	8,800,000	0.6%		7,970,000
	NBF Shibuya East	8,000,000	0.6%		8,240,000
	NBF Shibakouen Bldg.	6,770,000	0.5%		8,490,000
	NBF Takanawa Bldg.	6,667,200	0.5%		7,510,000
	NBF Akasaka Sanno Square	6,250,000	0.5%		7,380,000
	NBF Kandasudacho Bldg.	5,950,000	0.4%		8,730,000
	Sumitomo Densetsu Bldg.	5,385,000	0.4%		6,070,000
	NBF Higashi-Ginza Square	5,200,000	0.4%		8,340,000
	Panasonic Tokyo Shiodome Bldg.	5,075,000	0.4%		5,990,000
	NBF Ogawamachi Bldg.	4,940,000	0.4%		6,320,000
	Nihonbashi Kabuto-cho M-SQUARE	4,850,000	0.4%		5,420,000
	NBF Shinkawa Bldg.(Note 4)	4,424,281	0.3%		5,690,000
	Ryukakusan Bldg.	4,050,000	0.3%		5,010,000
	Jingumae M-SQUARE	3,700,000	0.3%		4,840,000
23 Wards of Tokyo	NBF Osaki Bldg.	66,860,000	4.8%	82.9%	86,800,000
	Gate City Ohsaki	57,281,060	4.1%		70,800,000
	Nakanosakaue Sunbright Twin	41,230,488	3.0%		31,400,000
	NBF Toyosu Canal Front	35,200,000	2.5%		38,600,000
	NBF Toyosu Garden Front	25,018,000	1.8%		29,800,000
	Osaki Bright Core - Bright Plaza	24,380,000	1.8%		25,000,000
	Nakameguro GT Tower	23,856,000	1.7%		23,000,000
	Ueno East Tower	21,600,000	1.6%		22,600,000
	OSAKI BRIGHT TOWER(Note 5)	13,970,000	1.0%		14,200,000
	NBF Ueno Bldg.	10,400,000	0.8%		9,830,000
	NBF Ikebukuro East	8,630,000	0.6%		13,500,000
	Higashi Gotanda Square	8,350,000	0.6%		8,600,000
	Toyo-cho Center Bldg.	7,800,000	0.6%		8,790,000
	NBF Ikebukuro Tower	4,695,000	0.3%		5,740,000
	NBF Ikebukuro City Bldg.	4,428,000	0.3%		5,890,000

Area	Property Name	Acquisition Price (¥ in thousands) (Note 1)	Percentage	Percentage of each area	Value (Real Estate Appraisal Value) (¥ in thousands) (Note 2)
Other Greater Tokyo	Chofu South Gate Bldg.	9,320,000	0.7%	6.0%	9,970,000
	Shin-Kawasaki Mitsui Bldg.	25,820,000	1.9%		23,700,000
	Yokohama ST Bldg.	13,529,300	1.0%		17,100,000
	Parale Mitsui Bldg.	3,800,000	0.3%		4,580,000
	Tsukuba Mitsui Bldg.	8,875,500	0.6%		8,780,000
	S-ino Omiya North Wing	16,816,345	1.2%		22,500,000
	NBF Urawa Bldg.	2,000,000	0.1%		2,160,000
	NBF Matsudo Bldg.	2,465,000	0.2%		2,820,000
Other Cities	Sapporo L-Plaza	4,404,405	0.3%	11.1%	7,840,000
	NBF Sapporo Minami Nijo Bldg.	1,870,300	0.1%		1,540,000
	NBF Unix Bldg.	4,028,900	0.3%		3,410,000
	NBF Niigata Telecom Bldg.	3,957,500	0.3%		2,750,000
	Sumitomo Mitsui Banking Nagoya Bldg.	14,900,000	1.1%		16,700,000
	Nagoya Mitsui Main Building (Note 5)	13,050,000	0.9%		13,300,000
	Nagoya Mitsui New Building (Note 5)	13,200,000	1.0%		13,500,000
	NBF Nagoya Hirokoji Bldg.	7,232,000	0.5%		6,790,000
	Aqua Dojima NBF Tower	17,810,000	1.3%		19,800,000
	Nakanoshima Central Tower	14,900,000	1.1%		18,900,000
	Shinanobashi Mitsui Bldg.	14,400,000	1.0%		13,400,000
	Sakaisuji-Honmachi Center Bldg.	12,700,000	0.9%		14,400,000
	Sun Mullion NBF Tower	10,500,000	0.8%		8,800,000
	NBF Hiroshima Tatemachi Bldg.	2,930,000	0.2%		2,530,000
	Hiroshima Fukuromachi Bldg.	2,215,000	0.2%		2,540,000
	NBF Matsuyama Nichigin-mae Bldg.	3,310,000	0.2%		3,830,000
	Hakata Gion M-SQUARE	8,000,000	0.6%		11,700,000
	NBF Kumamoto Bldg.	4,500,000	0.3%		4,040,000
Total		1,384,568,920	100.0%	100%	1,551,590,000

(Note 1) "Acquisition Price" represents in principle the price for which NBF acquired the property. As for the property to be acquired the future represents the sale and purchase price set forth in the relevant sale and purchase contract etc. at the time of the decision to acquire the said property (excluding miscellaneous acquisition costs, fixed assets tax, city-planning tax and consumption tax etc.).

(Note 2) "Value (Real Estate Appraisal Value)" represents the appraisal value as of the end of 1H'20 (as of June 30, 2020) The "Appraisal Value" of "OSAKI BRIGHT TOWER", "Nagoya Mitsui Main Building.", and "Nagoya Mitsui New Building." is as of July 31, 2020. The "Appraisal Value" of "Shinjuku Mitsui Bldg." and "Gran Tokyo South Tower" is as of August 31, 2020.

(Note 3) "Shinjuku Mitsui Bldg.", "Gran Tokyo South Tower", will be acquired as of January 8, 2021.

(Note 4) "NBF Shinkawa Bldg. (East Building and Residential Tower)" will be disposed 50% per disposition date (December 25, 2020 and March 31, 2021). Furthermore, "Acquisition Price" and " Value (Real Estate Appraisal Value)"shown as West building.

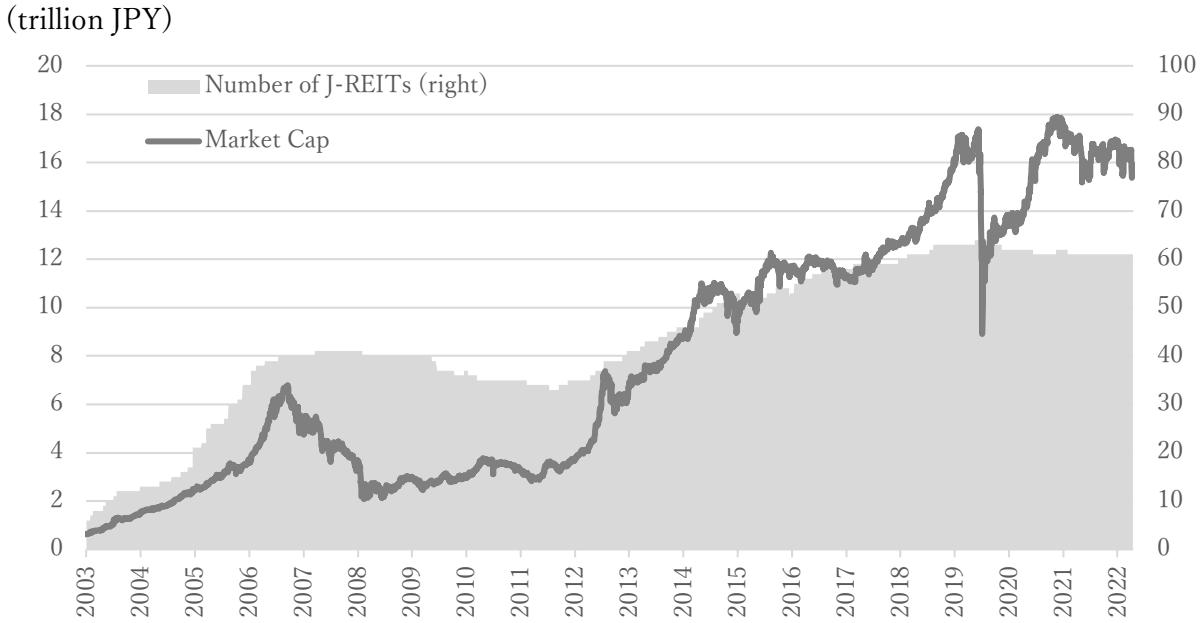
(Note 5) Acquisition of "OSAKI BRIGHT TOWER", "Nagoya Mitsui Main Building.", "Nagoya Mitsui New Building." were completed on October 1, 2020.

End

This English language notice is a translation of the Japanese language notice dated October 9, 2020 and was prepared solely for reference purposes. The Japanese language release should be referred to as the original. Neither NBF nor Nippon Building Fund Management Ltd. makes any warranties as to the accuracy or completeness of this English language notice.

Appendix B: Additional Figures

Figure *A1* Number and Market Capitalization of REITs

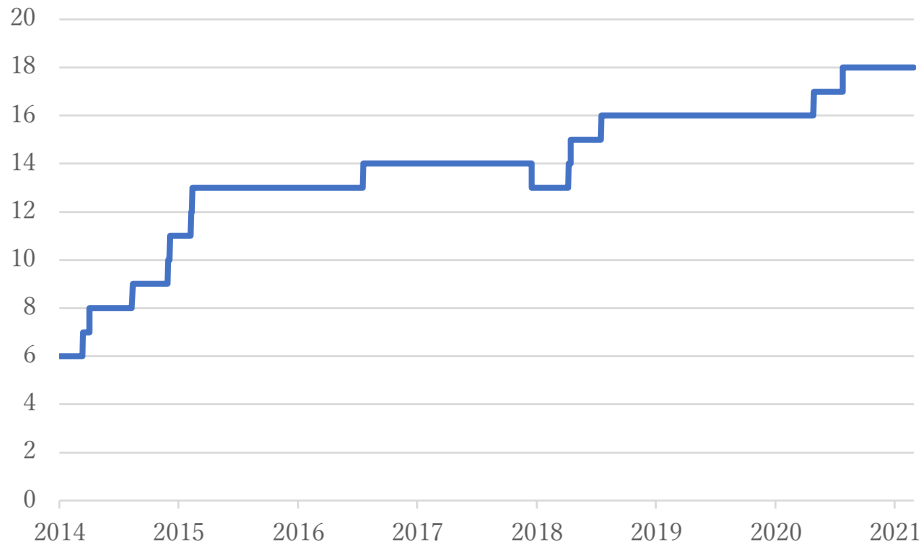


Source: Bloomberg

Figure *A2* TOPIX and REIT price returns

Source: Bloomberg

Figure A3 The number of AA credit ratings of REIT



This figure depicts the number of REITs that are rated AA or above. The sample consists of REITs that were listed on TSE at the end of December 2021.